ELK PETROLEUM

California LCFS CCS Update

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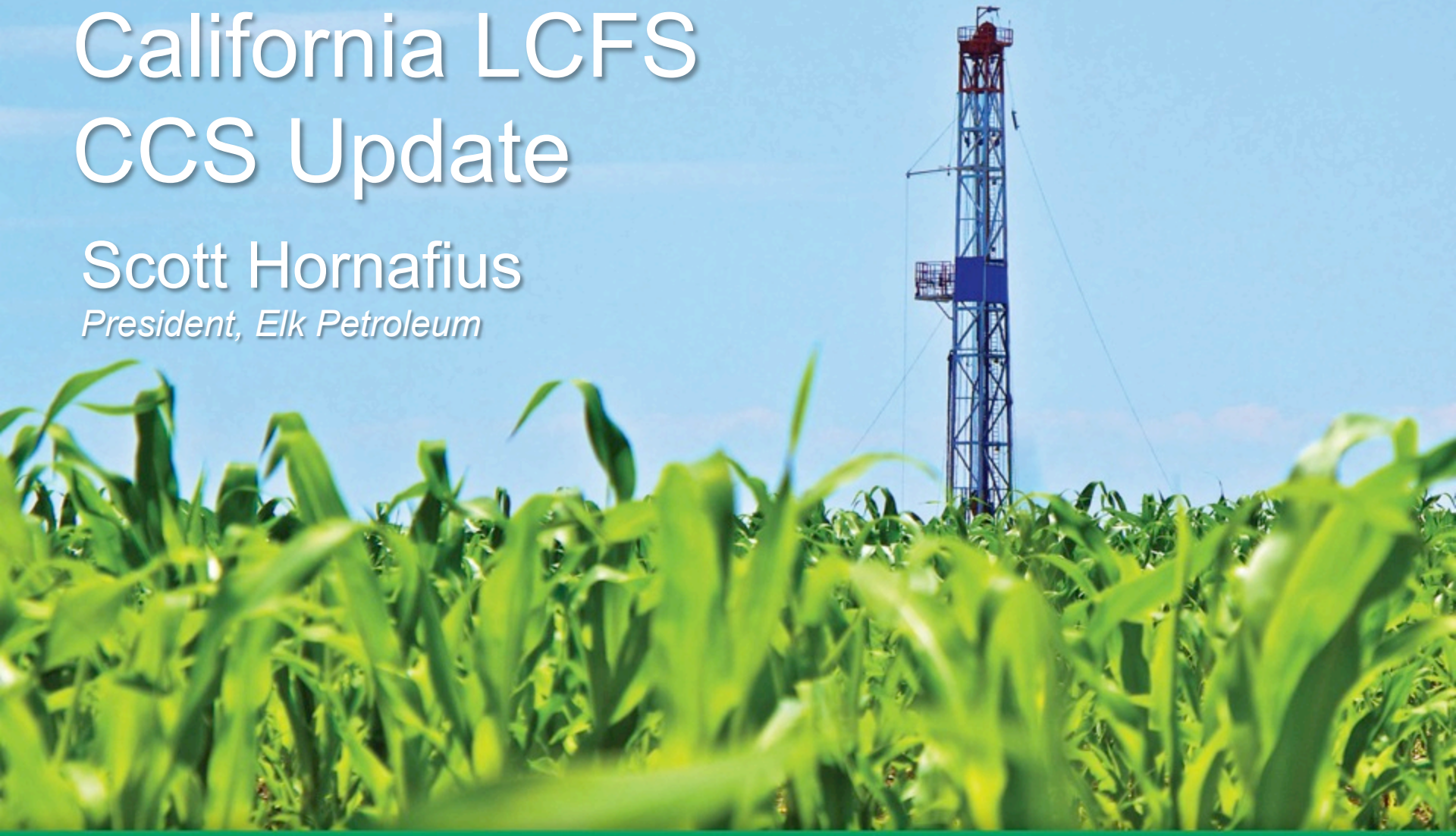
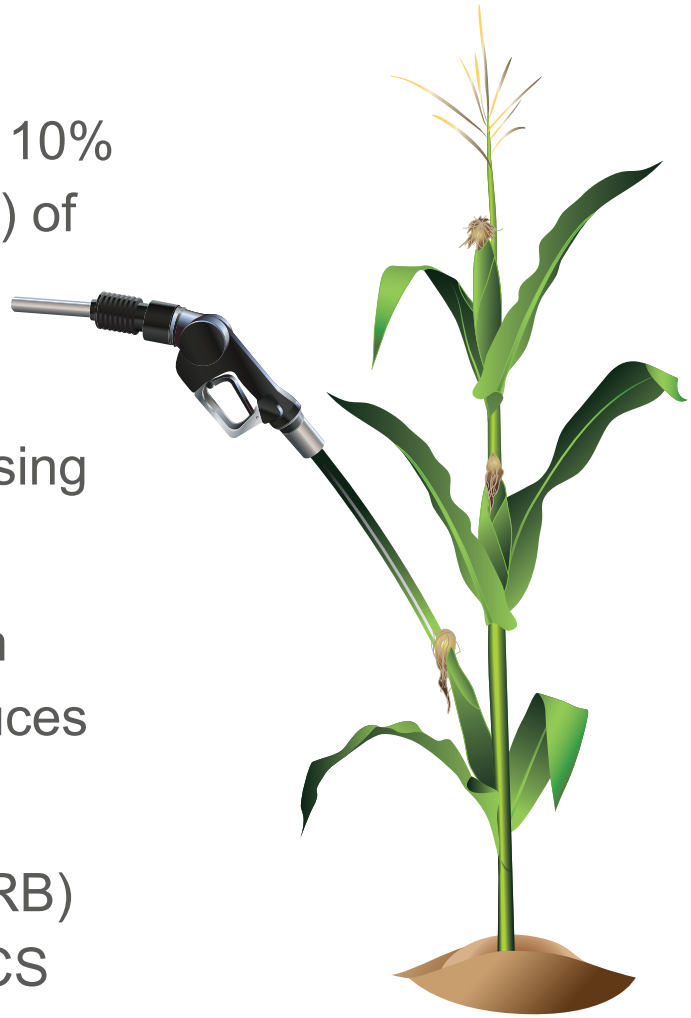


April 28, 2016

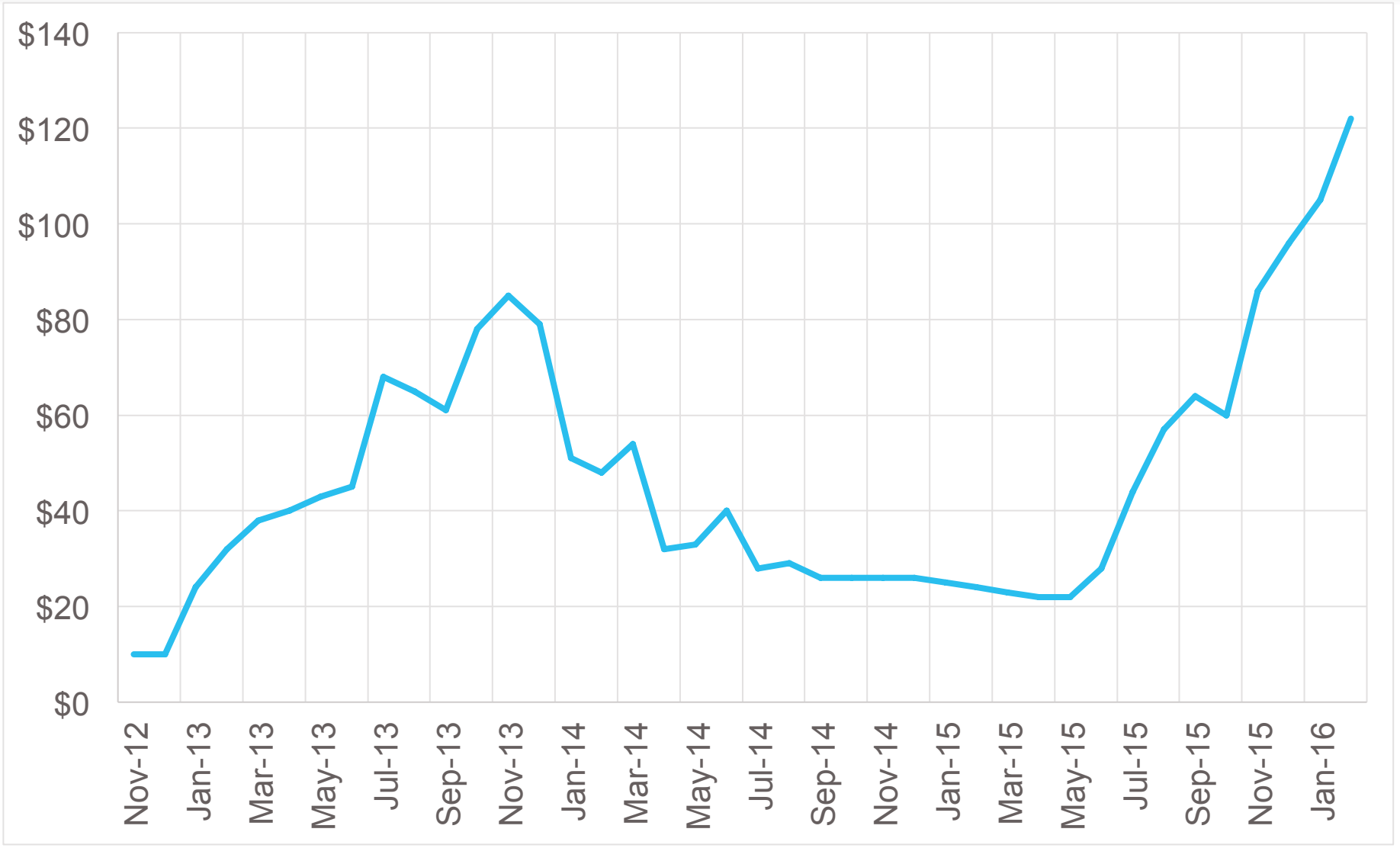
California LCFS CCS Update

Introduction

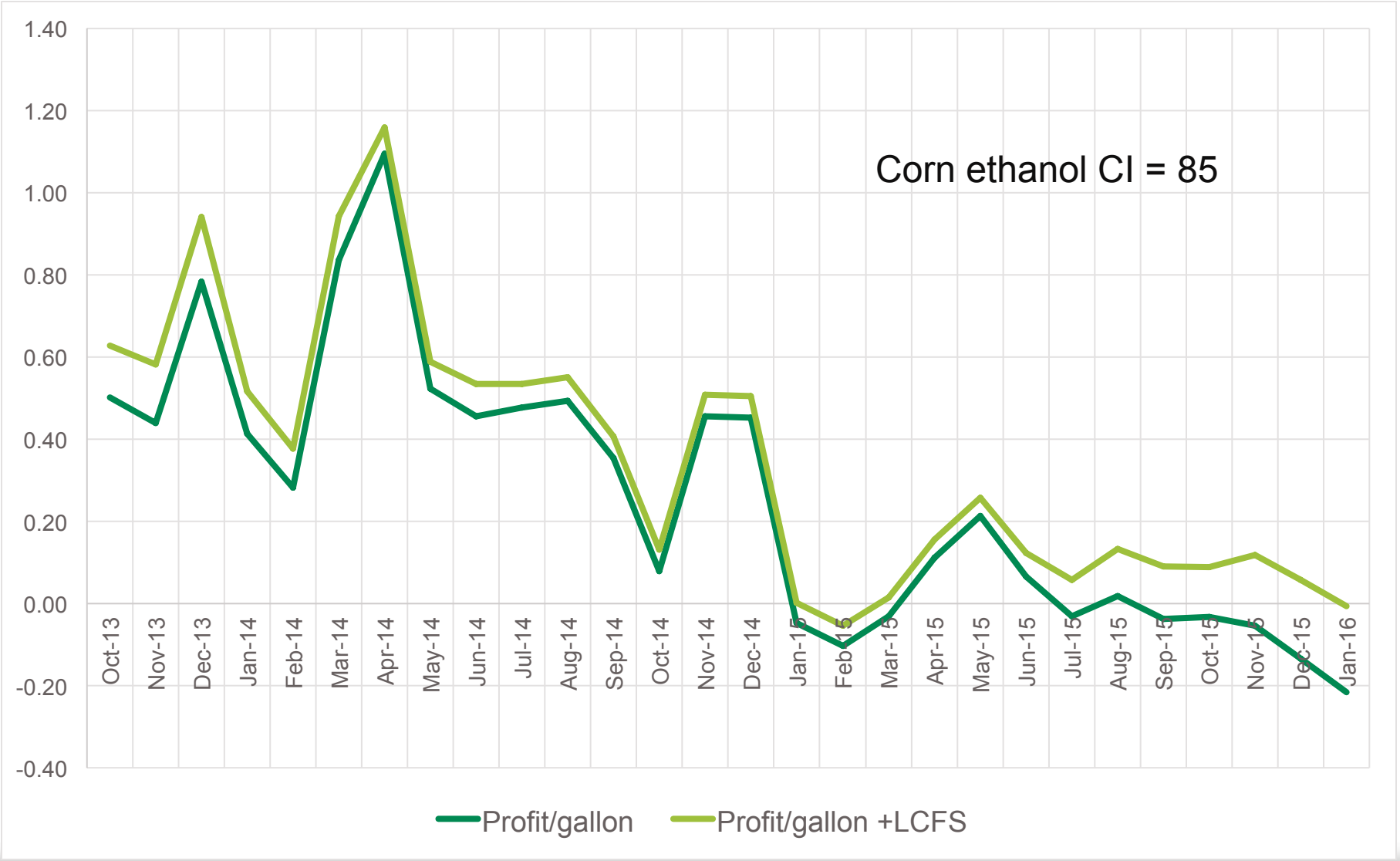
- California LCFS market mandates a 10% reduction in the Carbon Intensity (CI) of transportation fuels by 2020
- To receive credits, ethanol must be below the target CI, which is decreasing through time
- Carbon Capture and Storage of corn ethanol fermentation emissions reduces CI of ethanol (so increases credits)
- California Air Resources Board (CARB) started a rule making process for CCS and CCS credits will be available in 2018



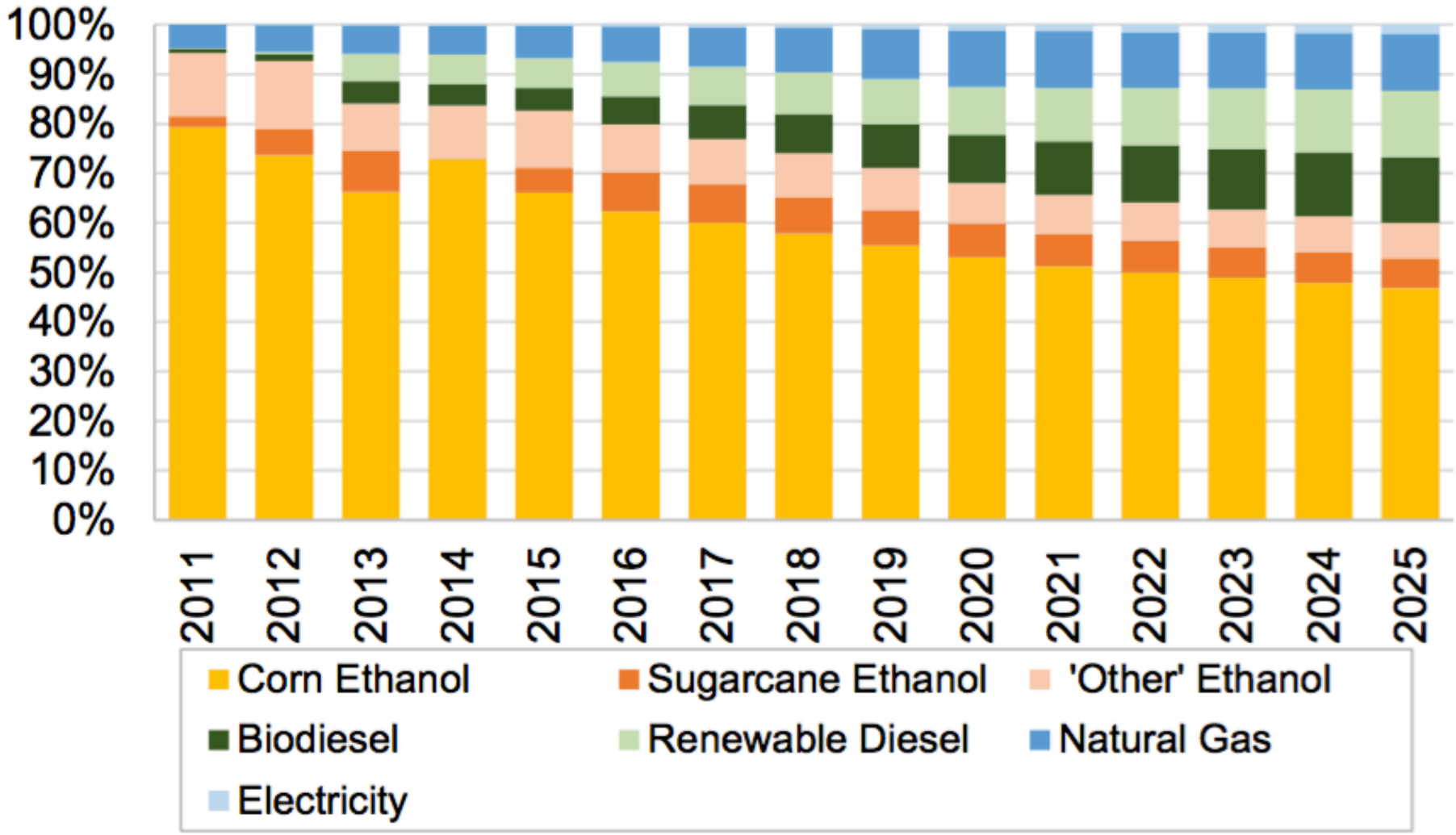
California LCFS Credit Price History



Ethanol Net Profit ($/gallon) with LCFS Credits

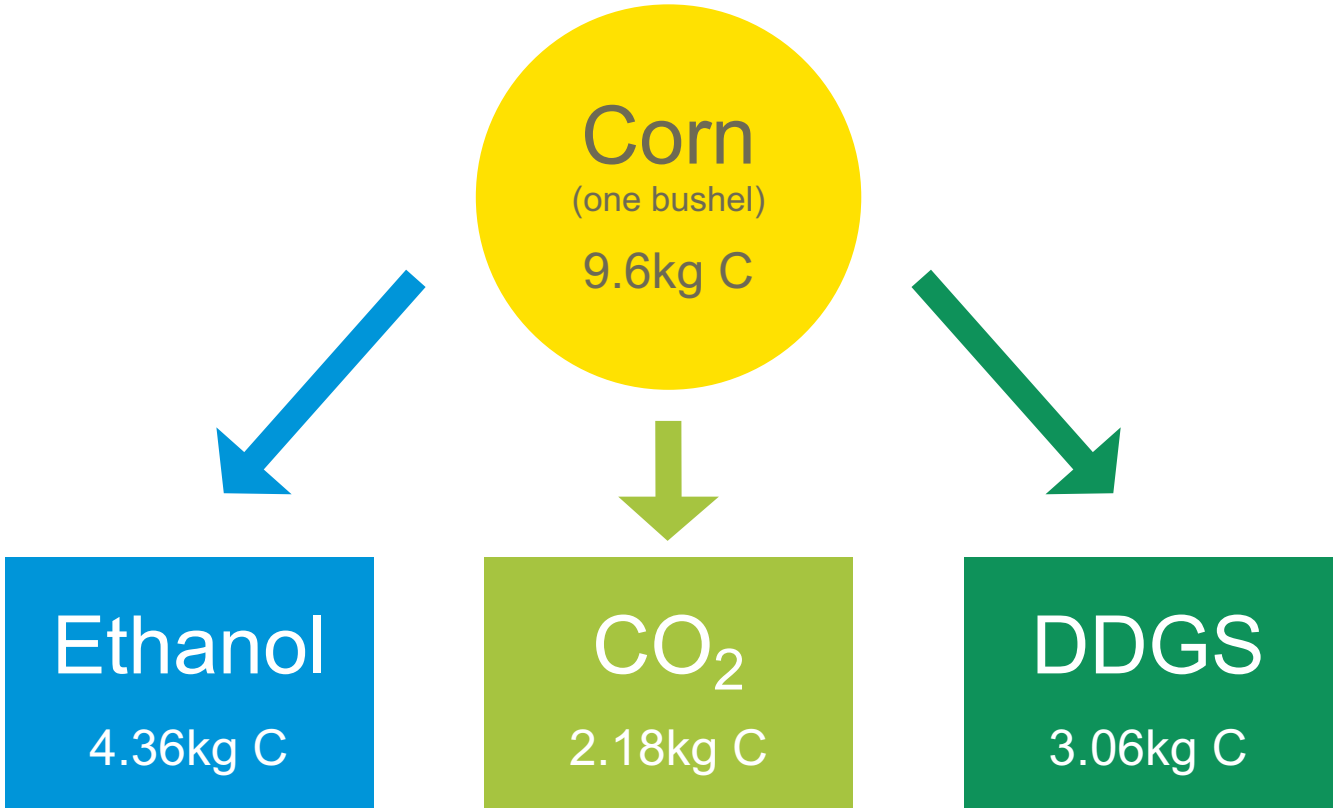


FORECAST LCFS FUEL VOLUMES BY TYPE



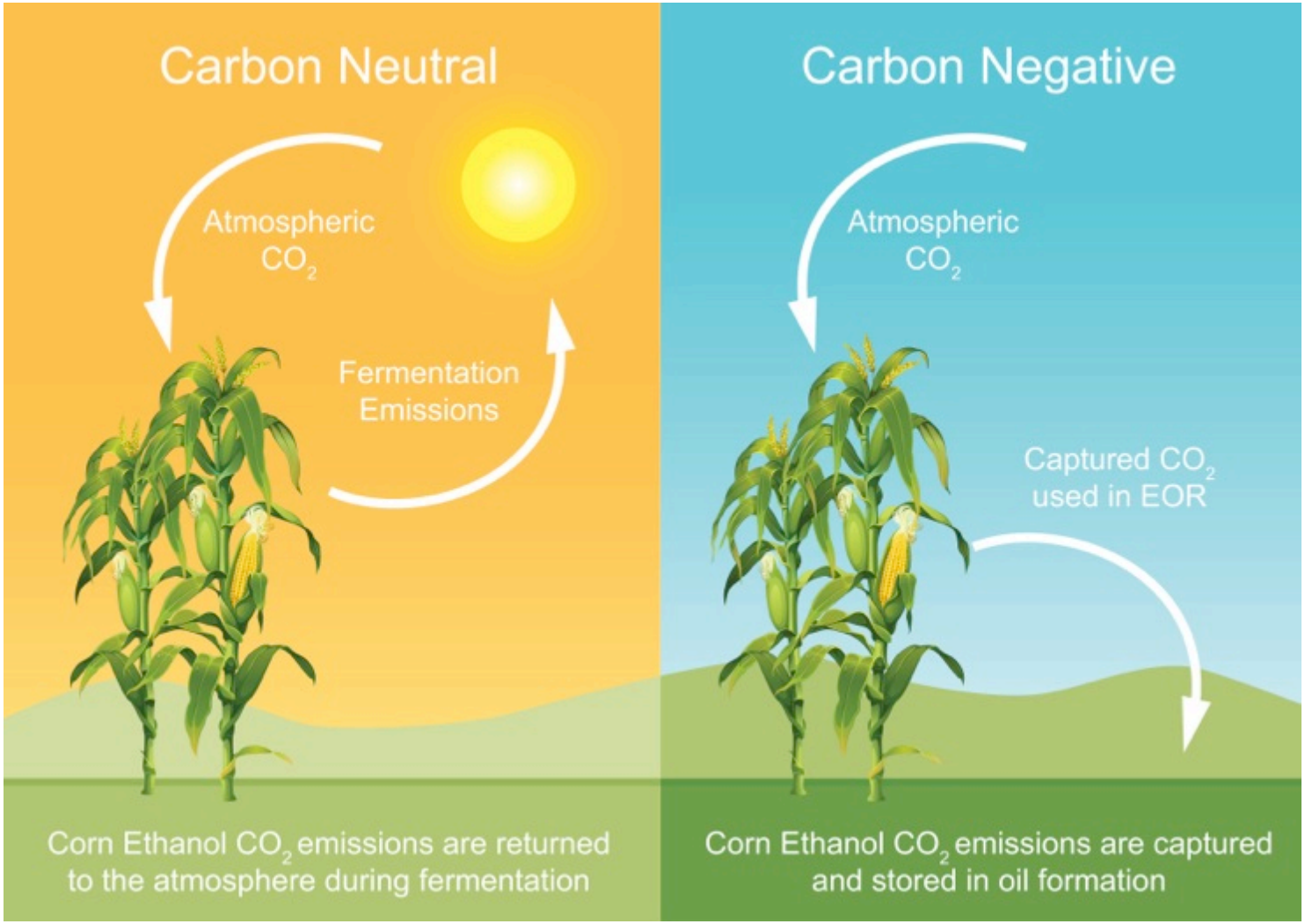
Source: EM²

CORN ETHANOL CO-PRODUCT CARBON CONTENT



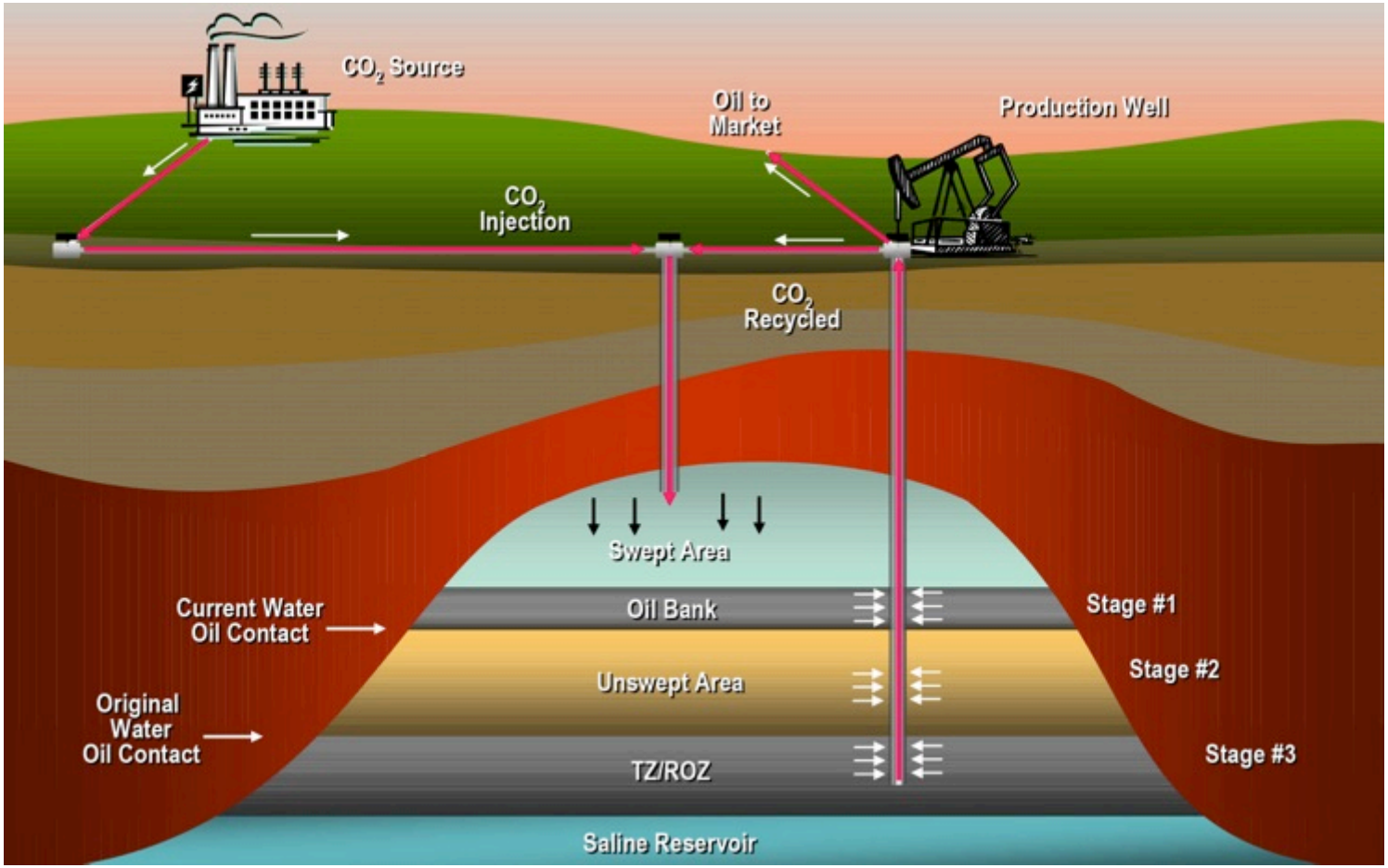
Source: Katherine Hornafius (2014)

CORN ETHANOL CO_2 FERMENTATION EMISSIONS PATHWAYS



Source: Hornafius & Hornafius: Carbon Negative Oil, IJGGC (2015)

CARBON DIOXIDE ENHANCED OIL RECOVERY (CO_2-EOR)



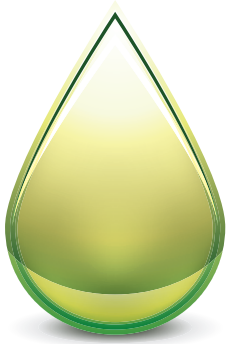
Source: Advanced Resources International

CARBON VALUE CHAIN

Ethanol

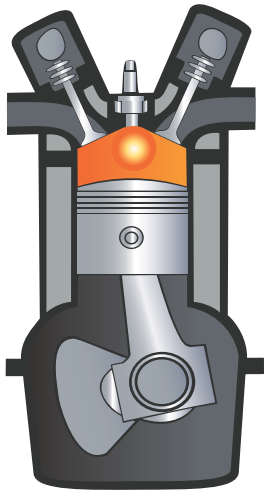
Carbon Capture

EOR



Storage

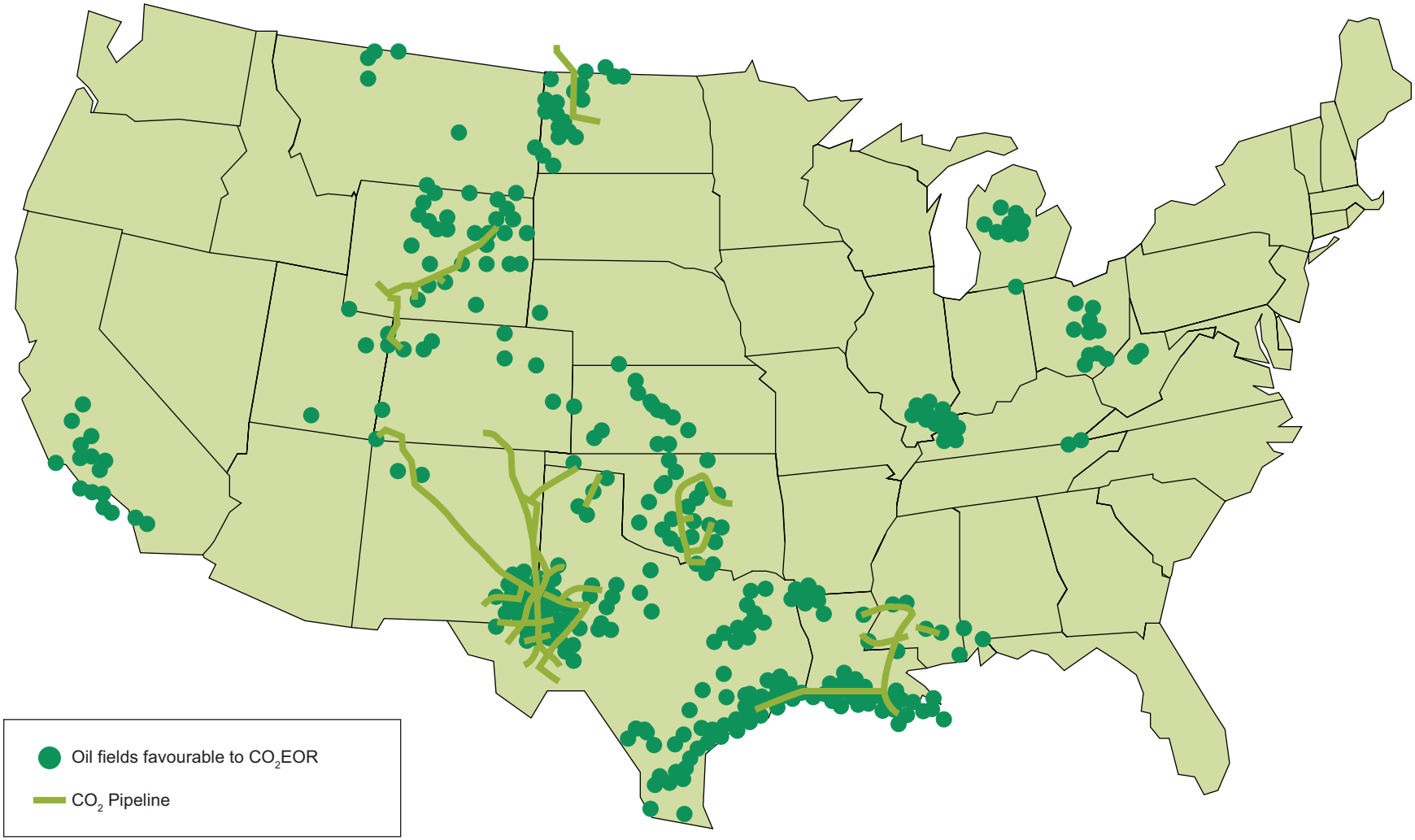
LCFS



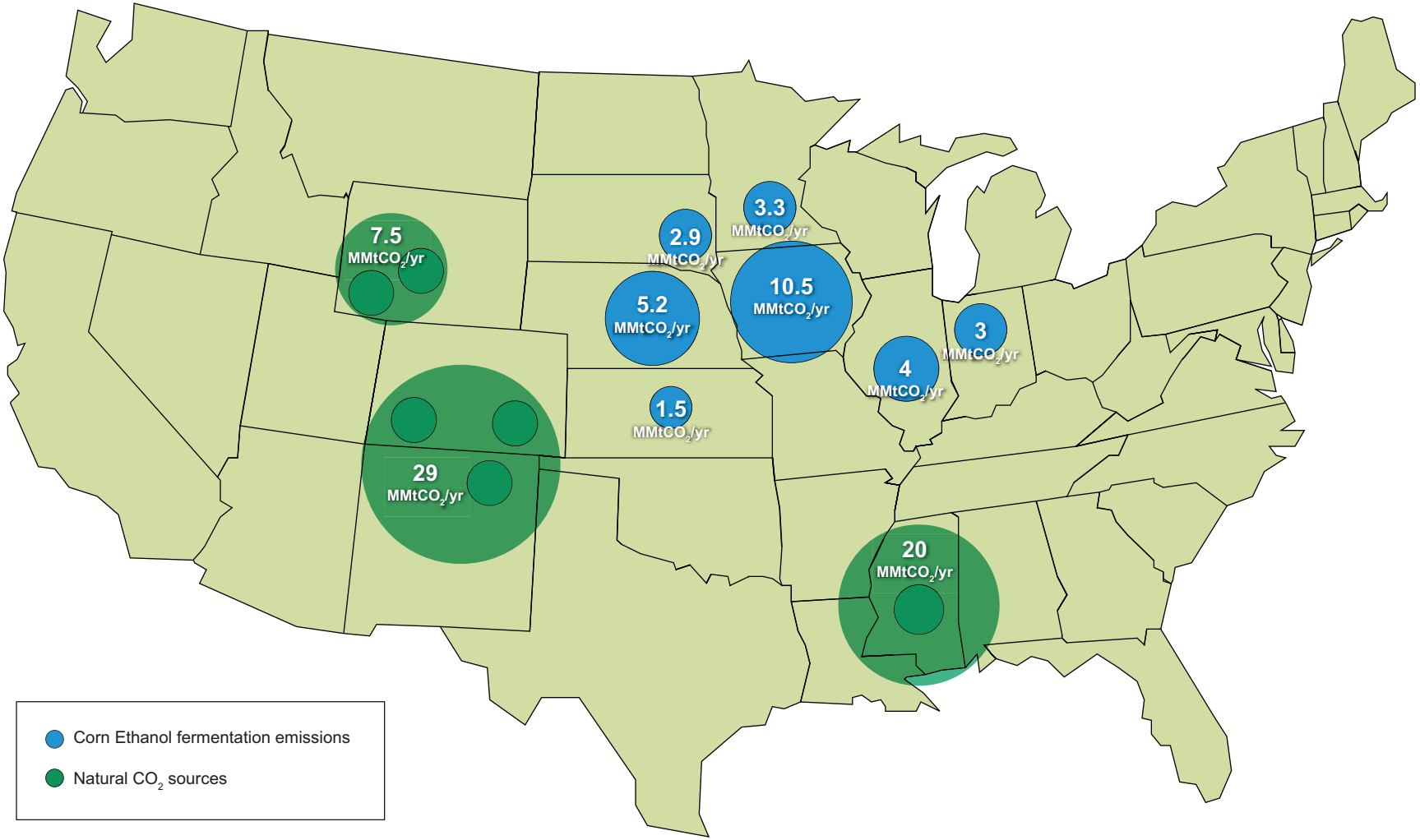
Utilization

Source: Katherine Hornafius (2014)

CURRENT CO_2 PIPELINE INFRASTRUCTURE & OIL FIELDS FAVOURABE TO CO_2-EOR

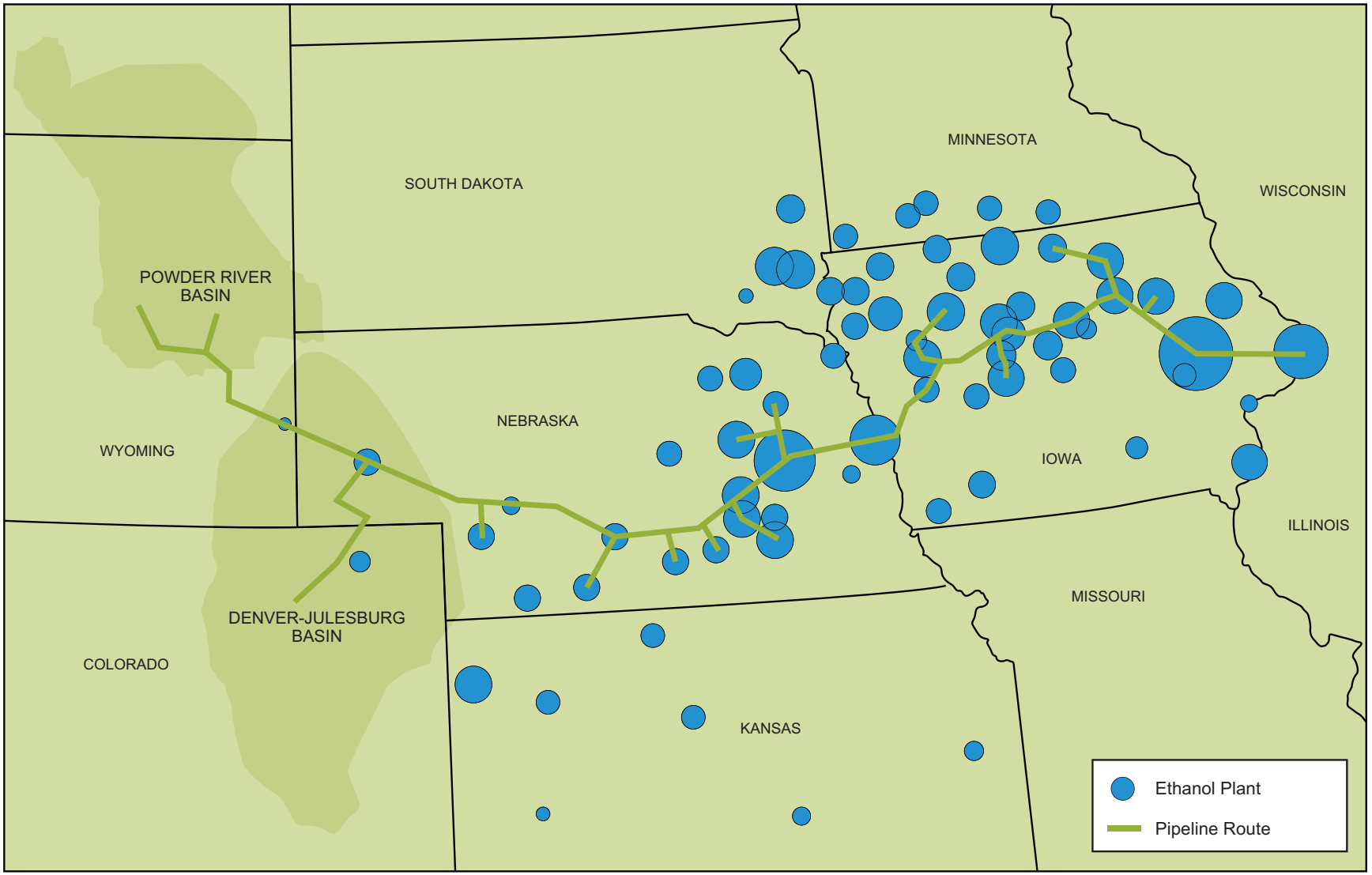


CO_2 SOURCES FOR CO_2-EOR



Source: Hornafius & Hornafius, Carbon Negative Oil, IJGGC (2015)

POSSIBLE CO_2 PIPELINE– Relative Ethanol Plant Capacities

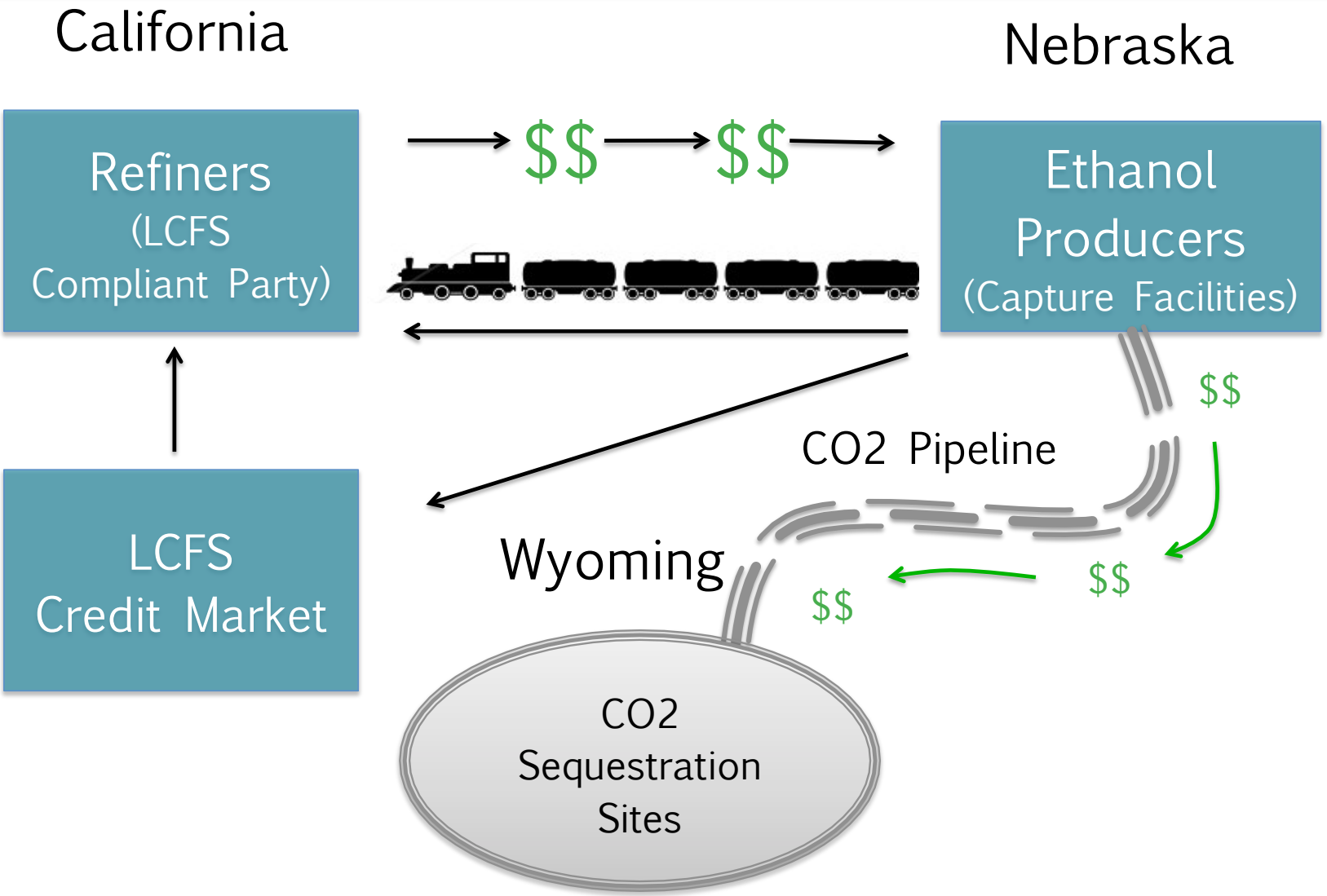


CO_2 PIPELINE CONSTRUCTION

- $1+ million/mile
- One year to construct
- 50 year life

Source: Global CCS Institute

CALIFORNIA LCFS CASH FLOWS FOR CCS

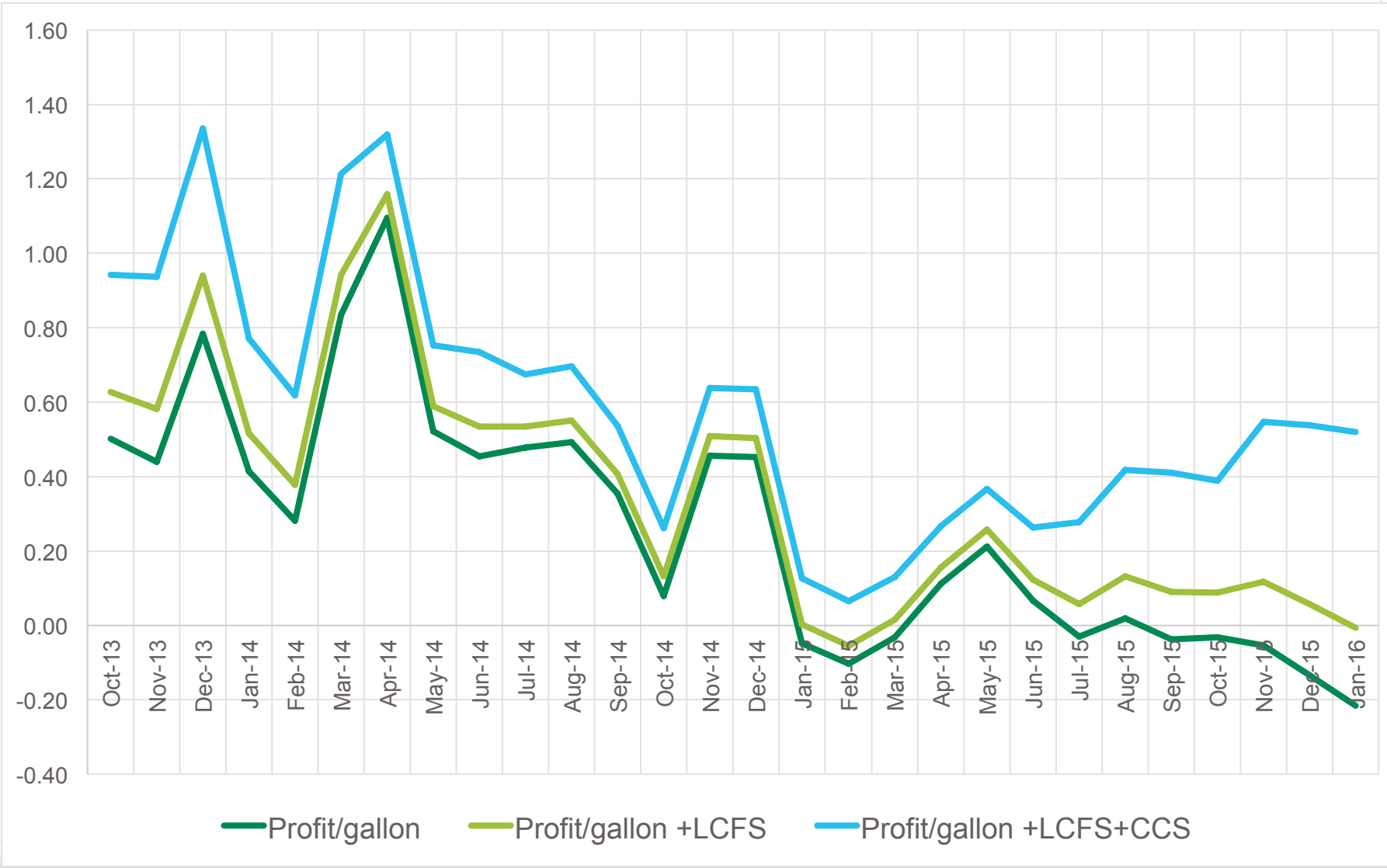


Ethanol Incremental Economics with LCFS Credits for CCS

- Base Case Assumptions
  - 500 mmcf/day of CO2 delivered to Wyoming for EOR
  - 2,853 MT/CO2 per million gallons of ethanol
  - 85% capture
  - $25 million CAPX for capture facilities for 100 MGA plant
  - Ethanol producer pays to ship CO2 to Wyoming
  - Ethanol with CCS has CI of 60
  - LCFS Credit Price = $100/metric tonne

- Base Case Returns
  - 10 year IRR = 32%
  - 10 year NPV @ 10% = $25 million

Ethanol Net Profit ($/gallon) with LCFS and CCS Credits



California LCFS CCS Update

Summary

- Carbon Capture and Storage of corn ethanol fermentation emissions reduces CI of ethanol (so increases credits)
- Partnerships with the oil industry will enable corn ethanol to increase the credits available from the LCFS market
- If the CCS rule making by CARB awards the credits to the the capture facility, then the ethanol industry will need to finance the capture and transportation of CO2
- Large-scale CCS project is highly profitable at $100/ton LCFS credit prices